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09/916,548	07/27/2001	Charles N. Harper	Serie 5684	8550

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AIR LIQUIDE
Intellectual Property
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HOUSTON, TX 77056

EXAMINER

OYEBISI, OJO O

ART UNIT	PAPER NUMBER
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3692

MAIL DATE	DELIVERY MODE
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05/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/916,548

Applicant(s)

HARPER, CHARLES N.

Examiner

OJO O. OYEBISI

Art Unit

3692

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

In the amendment filed on 03/05/2007, the following have occurred: claims 21, 28, and 35 have been amended. New claims 40-42 have been added, and claims 21-42 remain pending in this application. Further, the amendment has necessitated the withdrawal of claim rejections under 35 U.S.C 112, first paragraph.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Takriti (US PAT: 6,021,402).

Re claims 21, 28, 35 and 40-42. Takriti discloses a computer-implemented method for identifying an excess energy capacity in a production supply chain operated by a supply chain operator, comprising: identifying, by a supply chain optimizer, a potential production configuration for the production supply chain (i.e., a mathematical model of the problem is solved using appropriate optimization techniques. The solution provides the status of each generator at each time period of the planning horizon under each given scenario. By "status of a generator", what is meant is whether it is on or off. The solution also provides the load on each generator during each period in which it is operating, an optimal fuel mix for each generating unit, and the prices for purchasing

and selling power in the periods of the planning horizon. The technique used to solve the model provides information regarding the sensitivity of the solution to the input parameters and other valuable information to the decision maker, see the summary of the invention), wherein: the supply chain operator also operates at least one power generation facility to sustain industrial production by the production supply chain (see fig.2 element 12), (ii) the supply chain operator is capable of both consuming and selling electricity produced by the power generation facility while operating the production supply chain (i.e., marginal prices and sensitivity analysis for buying and selling, fig.2) , (iii) the potential production configuration is related to a target electricity production by the power generation facility (the applicant is basically defining what the potential production configuration is, thus carries no patentable weight i.e., descriptive non-functional element), and (iv) the potential production configuration reduces a production output and energy consumption for at least some portion of the production supply chain or increases electricity production by the power generation facility during a given time period determining (this is a descriptive non-functional element which carries no patentable weight), using a potential action valuation model, whether to reduce the production output of the production supply chain or increase electricity production by the power generation facility according to the potential production configuration to create the excess energy capacity during the time period; and if production output is determined to be reduced or electricity production by the power generation facility is determined to be increased, selling the excess energy capacity created by implementing the potential production configuration during the time period for the

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production supply capacity and the power generation facility (i.e., the procedure also provides the average cost per unit of power, $\lambda_{t,s}$, at each time period under every scenario. These values can be used in pricing the power at each time period of the planning horizon. Note that as time progresses, we obtain a new forecast. The excess capacity in the electric system (over the refined forecast) represents the amount of power that we should offer to sell in the market. In case of having less generation than the new forecasted load, we buy the needed power from the open market, see col.26 lines 35-45, see col.20 lines 1-15, also see " to avoid any blackouts, utilities make sure that, at each period, the maximum operating capacity of their system exceeds the demand of this period by a certain amount. This excess capacity is called "spinning reserves". To clarify the concept of spinning reserves, assume that our system has ten generators of which seven are on line at the current time period. Let us also say that the forecasted demand at this period is 12,000 MWH. In an optimal solution, the total generation would be close to 12,000 MWH. However, if the maximum capacity of our operating units; i.e., the total capacity when each unit is operating at $G_{i,t}$, is close to 12,000 MWH, our system cannot take any unexpected increase in the demand. In other words, the reliability of our system is low. The reliability can be improved by forcing the total maximum capacity of the operating units to exceed the expected demand by a certain amount of power. This excess capacity is the spinning reserves and is indicated by $r_{t,s}$. There are other reserve constraints that can be enforced to improve reliability. The treatment of such constraints is very similar to our treatment of spinning reserves," see col.12 line 63 through col.13 line 33).

Re claim 22. Takriti further discloses the method, wherein the potential action valuation model determines whether to reduce the production output of the production supply chain using a risk management model (see fig.2 element 111 and fig.3).

Re claim 23. Takriti further discloses the method, wherein the risk management model may be configured according to a set of risk tolerance criteria and risk performance criteria (i.e., What distinguishes our tool is that it allows the user to incorporate risk, through predictions of the load and fuel prices, and uses these predictions to create optimal schedules. Our tool uses hedging strategies to produce robust schedules that minimize cost and manage risk efficiently, see col.8 lines 60-65) .

Re claim 24. Takriti further discloses the method, wherein the forecasted price for electricity during the time period is determined using a forecasting and planning model utilizing historical and real-time data (see col.8 lines 32-65).

Re claim 25. Takriti further discloses the method, wherein, if production output is determined to be reduced, prior to the time period, increasing the production output of the supply chain to prepare of the reduced production of the supply chain for the time period (i.e., Fourth, to avoid any blackouts, utilities make sure that, at each period, the maximum operating capacity of their system exceeds the demand of this period by a certain amount. This excess capacity is called "spinning reserves". To clarify the concept of spinning reserves, assume that our system has ten generators of which seven are on line at the current time period. Let us also say that the forecasted demand

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at this period is 12,000 MWH. In an optimal solution, the total generation would be close to 12,000 MWH. However, if the maximum capacity of our operating units; i.e., the total capacity when each unit is operating at G.sub.i,t, is close to 12,000 MWH, our system cannot take any unexpected increase in the demand. In other words, the reliability of our system is low. The reliability can be improved by forcing the total maximum capacity of the operating units to exceed the expected demand by a certain amount of power. This excess capacity is the spinning reserves and is indicated by r.sub.t.sub.s. There are other reserve constraints that can be enforced to improve reliability. The treatment of such constraints is very similar to our treatment of spinning reserves, see col.12 line 63 through col.13 line 33).

Re claim 26. Takriti further discloses the method, wherein a data delivery engine is configured to supply real-time data (i.e., data generator, see fig.2 element 114 ad 111, see fig.3, also see fig.4 element 41) to the potential action valuation model, the supply chain optimizer, the forecasting and planning model, and the risk management model

Re claim 27. Takriti further discloses the method, wherein the real-time data includes real-time commodity prices for electricity (i.e., an estimate of the price of electricity in the open market, see col.5 lines 2-5).

Re claims 29 and 36. Claims 29 and 36 recite similar limitations to claim 22 above and thus rejected using the same art and rationale as in claim 22.

Re claims 30 and 37. Claims 30 and 37 recite similar limitations to claim 23 above and thus rejected using the same art and rationale as in claim 23.

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Re claims 31 and 38. Claims 31 and 38 recite similar limitations to claim 24 above and thus rejected using the same art and rationale as in claim 24.

Re claim 32. Claim 32 recites similar limitations to claim 25 above and thus rejected using the same art and rationale as in claim 25.

Re claim 33. Claim 33 recites similar limitations to claim 26 above and thus rejected using the same art and rationale as in claim 26.

Re claims 34 and 39. Claims 34 and 39 recite similar limitations to claim 27 above and thus rejected using the same art and rationale as in claim 27.

Response to Arguments

3. Applicant's arguments filed 03/05/2007 have been fully considered but they are not persuasive. Applicant has amended the independent claims to further distinguish his invention over the prior art. However, the applicant's amendment falls short of achieving this objective. The applicant argues in substance that the primary reference of record, Takriti, fails to teach a method for identifying an excess energy capacity in a production supply chain for a supply chain operator that also operates at least one power generation facility to sustain industrial production by the production supply chain, where the operator is capable of both consuming and selling electricity produced by the power generation facility while operating the production supply chain. Contrary to the applicant's assertion, the examiner maintains that Takriti teaches a method for identifying an excess energy capacity in a production supply chain for a supply chain operator that also operates at least one power generation facility to sustain industrial

production by the production supply chain (i.e., a mathematical model of the problem is solved using appropriate optimization techniques. The solution provides the status of each generator at each time period of the planning horizon under each given scenario. By "status of a generator", what is meant is whether it is on or off. The solution also provides the load on each generator during each period in which it is operating, an optimal fuel mix for each generating unit, and the prices for purchasing and selling power in the periods of the planning horizon. The technique used to solve the model provides information regarding the sensitivity of the solution to the input parameters and other valuable information to the decision maker, see Takriti the summary of the invention). Takriti also teaches "where the operator is capable of both consuming and selling electricity produced by the power generation facility while operating the production supply chain." (i.e., marginal prices and sensitivity analysis for buying and selling, fig.2, also see "the procedure also provides the average cost per unit of power, $\lambda_{t,s}$, at each time period under every scenario. These values can be used in pricing the power at each time period of the planning horizon. Note that as time progresses, we obtain a new forecast. The excess capacity in the electric system (over the refined forecast) represents the amount of power that we should offer to sell in the market. In case of having less generation than the new forecasted load, we buy the needed power from the open market," see col.26 lines 35-45, see col.20 lines 1-15).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

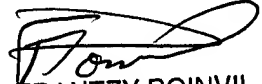
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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action. Any inquiry concerning this communication or earlier communications from the examiner should be directed to OJO O. OYEBISI whose telephone number is (571) 272-8298. The examiner can normally be reached on 8:30A.M-5:30P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, RICHARD E. CHILCOT can be reached on (571)272-6777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


FRANTZY POINVIL
PRIMARY EXAMINER

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